SP-104-AIML Active Learning Management

CS 4850 – Fall 2025

August 28, 2025



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Elijah Merrill Developer



Noah Lane Documentation



Matthew Hall Documentation

Team Members:

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Project Overview

We aim to create a program that is intelligent enough to be an image labeling system using an active learning loop to efficiently classify chest x-rays. The core objective is to minimize human labeling efforts while trying to achieve decent classification accuracy. By integrating an active learning system with uncertain sampling, the system selectively acquires the most informative images for labeling. The system will use tools like Python, mainly for the use of its libraries to help build an active learning framework, Kaggle for datasets, and Azure for testing large taxing runs due to high input of images.

Project Website

The current plan for our website domain is for it to be a GitHub page with the domain "ksusp104.github.io", but that could change throughout the project.

Deliverables

- Team/Project Selection document (Individual Assignment)
- Weekly Activity Reports (WARs Individual Assignment)
- Team Status Report (TSR Group Assignment)
- Peer Reviews (Individual Assignment)
- Project Plan (Group Assignment)
- SRS, SDD, STP & Dev Doc (Group Assignment)
- Prototype Presentation for Peer Review (Group Assignment)
- Final Report Package (Group Assignment)
 - Final Report (Group Assignment)
 - Source Code (Group Assignment)
 - Website (Group Assignment)
 - Video Demo (Group Assignment)
 - Web App or Notebook (Group Assignment)
 - Labeled Dataset (Group Assignment)
 - Learning Curve Analysis (Group Assignment)
- C-Day Application/Submission

Group Meeting Schedule

- 7 pm every Wednesday
- Sundays when necessary or appropriate
- Flexible according to the different schedules of all group members

Collaboration and Communication Plan

Microsoft Teams: For status meetings and weekly/bi-weekly group meetings

Discord/GroupMe: For communication, brainstorming, and information sharing

Project Schedule and Task Planning

Project Name:	SP-104-AIML Active Learning	Managemen	nt															- 1
Report Date:	8/31/2025																	
						Milest	tone#	1		Milestone #2				Milest	tone #3		C-Day	
Deliverable	Tasks		Current Status Memo		09/02	09/09	09/16	09/23	09/30	10/07	10/14	10/21	10/28	11/04	11/11	11/18	11/25	12/0
1	Meet with advisor	0%		All	2	2	1											
	Define requirements	0%		All	2	2	4											
	Review requirements with team	0%		All		2	4											
	Get sign off on requirements	0%		All			1	1	1									
	Define technical stack/ tech requ	0%		Matthew, Noa				5	5									
	Dataset preprocessing design	0%		Matthew, Noa				2	5	7								
	Labeling tool interface design	0%		Matthew, Noa						7	7							
	Active learning loop design	0%		Matthew, Noa			3	3	3	6	3							
	Prototype system architecture	0%		Matthew, Noa						10	5							
	Review design with group	0%		Matthew, Noa							5	10	5					
Development	Implement dataset /preprocessin	0%		Josh, Elijah								8	7	10				
	Build web app/notebook	0%		Josh, Elijah	1							8	10	20	20			
	Training prototype	0%		Josh, Elijah	1										12	15		
	Test prototype	0%		Josh, Elijah	1									10	15	20		
	Presentation preparation	0%		All	П											10	20	20
	Poster preparation	0%		All	1													5
	Final report submission to D2L				1													
	and project owner	0%		All	<u> </u>													10
			Total work hours	333	4	6	13	11	14	30	20	26	22	40	47	45	20	35
	* formally define how you will	develop this	project including sour	ce code manag														
Legend																		
Planned																		
Delayed																		
Number	Work: man hours																	

• All tasks and hours committed are estimated and subject to change as of the creation of this document.

Version Control Plan

Update releases of learning model/source code periodically through a group GitHub account.

https://github.com/ksusp104